PRIV.-DOZ. DR.RER.NAT. MÉLANIE HALL

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Email: melanie.hall@uni-graz.at
Date of birth: 11.09.1980 (France)

MAIN AREAS OF RESEARCH

Sustainable Catalysis – Enzymatic Methodologies for Asymmetric Synthesis – Enzymes in Biotechnology

EDUCATION

2016 Habilitation (Priv.-Doz.) | Department of Chemistry, University of Graz, Austria
Field: organic chemistry (venia docendi) – related field: molecular biosciences

2007 Ph.D. (*Dr.rer.nat*.) | Department of Chemistry, University of Graz, Austria

2004 M.Sc. (*diplôme d'ingénieur*) | École Nationale Supérieure de Chimie de Rennes (ENSCR), France

ACADEMIC EMPLOYMENT

2017- Independent Researcher | Department of Chemistry, University of Graz, Austria

2010-2016 University Assistant | Department of Chemistry, University of Graz, Austria

2010 Research scientist | School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, Atlanta, USA

2008-2010 Postdoctoral associate | School of Chemical and Biomolecular Engineering, Georgia Institute of Technology, Atlanta, USA

AWARDS

2016 National Habilitation Award of the Austrian Chemical Society (GÖCH)

2013 Anton-Paar Award of Science of the Austrian Chemical Society (GÖCH)

THIRD-PARTY FUNDING & COLLABORATIONS

2017-2019 Stand-Alone Project | Austrian Science Funds (FWF)
Intramolecular Bio-Tishchenko Reaction

2015-2017 Strategic Project | Austrian Center of Industrial Biotechnology (ACIB)
Human Monooxygenases
Project partner Prof. Andrea Mattevi, University of Pavia, Italy

2015-2016 Mobility Support | Austrian Agency for International Mobility & Cooperation (OeAD GmbH)
Asymmetric Bioreduction of α,β-unsaturated S-Compounds
Project partner Dr. Fabricio Bisogno, Universidad Nacional de Córdoba, Argentina

2013-2016 Chem21 European Project | Innovative Medicines Initiative (IMI)
Ene-Reductases for Stereoselective Synthesis

2012-2014 Strategic Project | Austrian Center of Industrial Biotechnology (ACIB)
δ- and γ-Lactamases

INVITED LECTURES AND SEMINARS

- Gordon Research Conference on Biocatalysis, *to come*, July 8-13, **2018**, Biddeford, USA.
- Campus for Biotechnology and Sustainability, TU Munich, October 19, **2017**, Straubing, Germany
- GÖCH 17. Austrian Chemistry Days, September 25-28, **2017**, Salzburg, Austria.
- 8th World Congress on Oxidation Catalysis, September 3-8, **2017**, Krakow, Poland.
- Department of Chemistry, TU Munich, May 12, **2017**, Munich, Germany.
- Organic Chemistry Institute, WWU Münster, March 2, **2017**, Münster, Germany.
- Mini-Symposium on Environmental Biotechnology, Science for Life Laboratory, KTH Royal Institute of Technology, October 26, **2016**, Stockholm, Sweden.
- Annual Research Meeting of the Structural Biology Unit, Department of Biology and Biotechnology, University of Pavia, April 7-8, **2016**, Brallo di Pregola, Italy.
- PhD Course 'Taming Enzymes: Advances in Biocatalytic Processes', November 24-26, **2015**, Cordoba, Argentina.
- XX National Symposium of Organic Chemistry (SINAQO), November 11-14, **2015**, Mar del Plata, Argentina.
- PhD School in Industrial Chemistry and Chemical Engineering, Department of Chemistry, Materials, and Chemical Engineering 'G. Natta', Politecnico di Milano, September 25, **2015**, Milan, Italy.
- Industrial Enzymes Workshop, September 22-23, **2015**, Pavia, Italy.
- GÖCH 16. Austrian Chemistry Days, September 21-24, **2015**, Innsbruck, Austria.
- Department of Chemistry, Université de Montréal, August 25, **2015**, Montreal, Canada.
- Atlanta Flavin Meeting at the Georgia Institute of Technology, June 29, **2015**, Atlanta, USA.
- Active Enzyme Molecule 2014 (AEM), December 17-19, **2014**, Toyama, Japan.
- Graduate School of Agriculture, Kyoto University, December 16, **2014**, Kyoto, Japan.
- Institute of Organic Chemistry, University of Regensburg, October 29, **2014**, Regensburg, Germany.
- Gordon Research Conference on Biocatalysis, July 6-11, **2014**, Smithfield, USA.

  Young Investigator Talk
- 25th Symposium of the CBSO, June 3-6, **2014**, Carry-le-Rouet, France.
- Empa 3rd 1 Day Symposium on Biocatalysis, January 20, **2014**, St Gallen, Switzerland.
- International Conference of Young Chemists (ICYC), April 8-10, **2012**, Amman, Jordan.
- 3rd Annual PhD Workshop on Enzymatic Hydrolysis of Insoluble Substrates, October 25-26, **2011**, Holbæk, Denmark.
- GÖCH 14. Austrian Chemistry Days, September 26-29, **2011**, Linz, Austria.
- 3rd Young Investigator's Workshop, Organic Division of EuCheMS, July 8-9, **2011**, Heraklion, Greece.

  Nominated as one of the two Austrian delegates by the Austrian Chemical Society (GÖCH)

LECTURES

- European Summit of Industrial Biotechnology (ESIB), November 14-16, **2017**, Graz, Austria
- 13th European Congress on Catalysis (EUROPACAT 2017), August 27-31, **2017**, Florence, Italy.

- 13th International Symposium on Biocatalysis and Biotransformations (Biotrans), July 9-13, **2017**, Budapest, Hungary.
- Second Anatolian Conference on Synthetic Organic Chemistry (ACSOCII), March 21-24, **2016**, Kusadasi, Turkey.
- International Symposium on Activation of Dioxygen and Homogeneous Oxidation Catalysis (ADHOC), June 21-25, **2015**, Madison, USA.
- Chemiedozententagung 2015, March 2-4, **2015**, Regensburg, Germany.
- Green Chemistry for Pharma Conference, September 23-24, **2014**, Graz, Austria.
- 18th International Symposium on Flavins and Flavoproteins, July 27-August 01, **2014**, Cha-Am, Thailand.
- 11th International Symposium on Biocatalysis and Biotransformations (Biotrans), July 21-25, **2013**, Manchester, UK.
- 2nd International Conference on Molecular and Functional Catalysis (ICMFC-2), July 30-31, **2012**, Singapore.
- 4th European Conference on Chemistry for Life Sciences (ECCLS), August 31-September 3, **2011**, Budapest, Hungary.
- 5th International Congress on Biocatalysis (Biocat), August 27-September 2, **2010**, Hamburg, Germany.
- Pacific Rim Summit on Industrial Biotechnology and Bioenergy, November 8-11, **2009**, Honolulu, USA.
- 9th International Symposium on Biocatalysis and Biotransformations (Biotrans), July 5-9, **2009**, Bern, Switzerland.
- 31st Symposium on Biotechnology for Fuels and Chemicals, May 3-7, **2009**, San Francisco, USA.
- 8th International Symposium on Biocatalysis and Biotransformations (Biotrans), July 8-13, **2007**, Oviedo, Spain.

PUBLICATIONS (Scopus Author ID: **35336697100** | http://orcid.org/0000-0003-4539-1992)

[§] Joint first authors; [*] Joint corresponding authors; [#] Featured on the journal cover.

40) S. Gandomkar, A. Dennig, A. Dordic, L. Hammerer, M. Pickl, T. Haas, M. Hall[*], K. Faber[*], Biocatalytic Oxidative Cascade for the Conversion of Fatty Acids to α-Ketoacids via Internal H_2O_2 Recycling, *Angew. Chem. Int. Ed*., DOI: 10.1002/anie.201710227.

39) I. Janicki, P. Kiełbasiński, N. G. Turrini, K. Faber, M. Hall, Asymmetric Bioreduction of β-Activated Vinylphosphonate Derivatives Using Ene-Reductases[#], *Adv. Synth. Catal.*, **2017**, *359*, 4190-4196.

Selected as VIP Paper.

38) F. Fiorentini, E. Romero, M. Fraaije, K. Faber, M. Hall[*], A. Mattevi[*], Baeyer-Villiger Monooxygenase FMO5 as Entry Point in Drug Metabolism, *ACS Chem. Biol*., **2017**, *12*, 2379-2387.

Selected as a 'Faculty of 1000' article (F1000Prime) of special significance.

37) G. Tasnádi, M. Zechner, M. Hall, K. Baldenius, K. Ditrich, K. Faber, Investigation of Acid Phosphatase Variants for the Synthesis of Phosphate Monoesters, *Biotechnol. Bioeng*., **2017**, *114*, 2187-2195.

36) R. C. Cioc, V. Estévez, D. J. van der Niet, C. M. L. Vande Velde, N. G. Turrini, M. Hall, K. Faber, E. Ruijter, R. V. A. Orru, Stereoselective Synthesis of Functionalized Bicyclic Scaffolds by Passerini 3-Center-2-Component Reactions of Cyclic Ketoacids, *Eur. J. Org. Chem*., **2017**, 1262-1271.

35) N. G. Turrini, R. C. Cioc, D. J. van der Niet, E. Ruijter, R. V. A. Orru, M. Hall, K. Faber, Biocatalytic Access to Nonracemic γ-Oxo Esters *via* Stereoselective Reduction Using Ene-Reductases, *Green Chem.*, **2017**, *19*, 511-518.

34) N. G. Turrini, E. Eger, T. C. Reiter, K. Faber, M. Hall, Sequential Enzymatic Conversion of α-Angelica Lactone to γ-Valerolactone *via* Hydride-Independent C=C Bond Isomerization, *ChemSusChem*, **2016**, *9*, 3393-3396.

33) M. Fink, S. Trunk, M. Hall, H. Schwab, K. Steiner, Engineering of TM1459 from *Thermotoga maritima* for Increased Oxidative Alkene Cleavage Activity, *Front. Microbiol.*, **2016**, *7*, 1511.

32) G. Tasnádi, M. Hall, K. Baldenius, K. Ditrich, K. Faber, Biocatalytic Functionalization of Hydroxyalkyl Acrylates and Phenoxyethanol *via* Phosphorylation, *J. Biotechnol*., **2016**, *233*, 219-227.

31) J. Gross, Z. Prokop, D. Janssen, K. Faber, M. Hall, Regio- and Enantioselective Sequential Dehalogenation of *rac*-1,3-Dibromobutane by Haloalkane Dehalogenase LinB, *ChemBioChem*, **2016**, *17*, 1437-1441.

30) A. Dennig, S. Kurakin, M. Kuhn, A. Dordic, M. Hall, Kurt Faber, Enzymatic Oxidative Tandem Decarboxylation of α,ω-Dioic Acids to α,ω-Dienes, *Eur. J. Org. Chem*., **2016**, *21*, 3473-3477.

29) F. Fiorentini, M. Geier, C. Binda, M. Winkler, K. Faber, M. Hall*, A. Mattevi*, Biocatalytic Characterization of Human FMO5: Unearthing Baeyer-Villiger Reactions in Humans, *ACS Chem. Biol.*, **2016**, *11*, 1039-1048.

28) G. Tasnádi, M. Lukesch, M. Zechner, W. Jud, M. Hall, K. Ditrich, K. Baldenius, A. F. Hartog, R. Wever, K. Faber, Exploiting Acid Phosphatases in the Synthesis of Phosphorylated Monoalcohols and Diols, *Eur. J. Org. Chem*., **2016**, 45-50.

27) M. Geier, C. Brandner, G. A. Strohmeier, M. Hall, F. S. Hartner, A. Glieder, Engineering *Pichia pastoris* for Improved NADH Regeneration: A Novel Chassis Strain for Whole-Cell Catalysis, *Beilstein J. Org. Chem*., **2015**, 11, 1741-1748.

26) I. Hajnal, K. Faber, H. Schwab, M. Hall*, K. Steiner*, Oxidative Alkene Cleavage Catalysed by Manganese-dependent Cupin TM1459 from *Thermotoga maritima*, *Adv. Synth. Catal*., **2015**, *357*, 3309-3316.

Highlighted in *Nat. Prod. Rep*., **2016**, *33*, 122.

25) A. Dennig, M. Kuhn, S. Tassoti, A. Thiessenhusen, S. Gilch, T. Bülter, T. Haas, M. Hall, K. Faber, Oxidative Decarboxylation of Short-Chain Fatty Acids to 1-Alkenes, *Angew. Chem. Int. Ed*., **2015**, *54*, 8819-8822.

Selected as VIP Paper | Highlighted in *Synfacts* **2015**, *11*, 0993 and *Nat. Prod. Rep*., **2015**, *32*, 1364.

24) N. G. Turrini, M. Hall, K. Faber, Enzymatic Synthesis of Optically Active Lactones *via* Asymmetric Bioreduction Using Ene-Reductases from the Old Yellow Enzyme Family, *Adv. Synth. Catal*., **2015**, 357, 1861-1871.

Selected as VIP Paper | Highlighted in *Nat. Prod. Rep*., **2015**, *32*, 1364.

23) Z. Assaf, E. Eger, Z. Vitnik, W. M. Fabian, D. Ribitsch, G. M. Guebitz, K. Faber, M. Hall, Identification and Application of Enantiocomplementary Lactamases for Vince Lactam Derivatives, *ChemCatChem*, **2014**, *6*, 2517-2521.

22) C. Wuensch[§], H. Lechner[§], S. M. Glueck, K. Zangger, M. Hall[*], K. Faber[*], Asymmetric Biocatalytic Cannizzaro-Type reaction, *ChemCatChem*, **2013**, *5*, 1744-1748.

21) G. Oberdorfer, A. Binter, S. Wallner, K. Durchschein, M. Hall, K. Faber, P. Macheroux, K. Gruber, The Sstructure of Glycerol Trinitrate Reductase NerA from *Agrobacterium radiobacter* Reveals the Molecular Reason for Nitro- and Ene-Reductase Activity in OYE Homologues, *ChemBioChem*, **2013**, *14*, 836-845.

20) G. Oberdorfer, K. Gruber, K. Faber[*], M. Hall[*], Stereocontrol Strategies in the Asymmetric Bioreduction of Alkenes, *Synlett*, **2012**, *23*, 1857-1864.

19) G. Tasnádi, C. K. Winkler, D. Clay, N. Sultana, W. M. F. Fabian, M. Hall, K. Ditrich, K. Faber, A Substrate-Driven Approach to Determine Reactivities of α,β-Unsaturated Carboxylic Esters Towards Asymmetric Bioreduction, *Chem. Eur. J.*, **2012**, *18*, 10362-10367.

18) G. Tasnádi, C. K. Winkler, D. Clay, M. Hall, K. Faber, Reductive Dehalogenation of β-Haloacrylic Ester Derivatives Mediated by Ene-Reductases[#], *Catal. Sci. Technol*., **2012**, *2*, 1548-1552.

Selected as a *Catalysis Science & Technology* Hot Article

17) P. Bansal, B. J. Vowell, M. Hall, M. J. Realff, J. H. Lee, A. S. Bommarius, Elucidation of Cellulose Accessibility, Hydrolysability and Reactivity as the Major Limitations in the Enzymatic Hydrolysis of Cellulose, *Bioresour. Technol.*, **2012**, *107*, 243–250.

16) M. Hall[§], J. Rubin[§], S. Behrens, A. S. Bommarius, The Cellulose-Binding Domain of Cellobiohydrolase Cel7A from *Trichoderma reesei* is Also a Thermostabilizing Domain, *J. Biotechnol.*, **2011**, *155*, 370-376.

15) C. Stueckler, C. K. Winkler, M. Hall, B. Hauer, M. Bonnekessel, K. Zangger, K. Faber, Stereo-Controlled Asymmetric Bioreduction of α,β-Dehydroamino Acid Derivatives, *Adv. Synth. Catal.*, **2011**, *353*, 1169-1173.

14) Y. Yanto, C. K. Winkler, S. Lohr, M. Hall, K. Faber, A. S. Bommarius, Asymmetric Bioreduction of Alkenes Using Ene-Reductases YersER and KYE1, and Effects of Organic Solvents, *Org. Lett.*, **2011, *13*,** 2540-2543**.**

13) K. Tauber, M. Hall, W. Kroutil, W. M. F. Fabian, K. Faber, S. Glueck, A Highly Efficient ADH-Coupled NADH-Recycling System for the Asymmetric Bioreduction of C=C Double Bonds using Enoate Reductases, *Biotechnol. Bioeng.*, **2011**, *108*, 1462-1467.

12) M. Hall, P. Bansal, J. H. Lee, M. J. Realff, A. S. Bommarius, Biological Pretreatment of Cellulose: Enhancing Enzymatic Hydrolysis Rate using Cellulose-Binding Domains from Cellulases, *Bioresour. Technol.*, **2011**, *102*, 2910-2915.

11) Y. Yanto, H.-H. Yu, M. Hall, A. S. Bommarius, Characterization of Xenobiotic Reductase A (XenA): Study of Active Site Residues, Substrate Spectrum and Stability, *Chem. Commun.*, **2010**, *46*, 8809-8811.

10) Y. Yanto, M. Hall, A. S. Bommarius, Nitroreductase from *Salmonella typhimurium*: Characterization and Catalytic Activity, *Org. Biomol. Chem.*, **2010**, *8*, 1826-1832.

9) P. Bansal, M. Hall, M. J. Realff, J. H. Lee, A. S. Bommarius, Multivariate Statistical Analysis of X-ray Data from Cellulose: A New Method to Determine Degree of Crystallinity and Predict Hydrolysis Rates, *Bioresour. Technol.*, **2010**, *101*, 4461-4471.

8) M. Hall, P. Bansal, J. H. Lee, M. J. Realff, A. S. Bommarius, Cellulose Crystallinity: A Key Predictor of Enzymatic Hydrolysis Rate, *FEBS J.*, **2010**, *277*, 1571-1582.

FEBS Journal Top-Cited Paper Award (as one of the **top 10** most-cited *FEBS Journal* papers two years from publication) | Highly cited paper (top 1% of the academic field of Biology & Biochemistry)

7) N. J. Mueller, C. Stueckler, M. Hall, P. Macheroux, K. Faber. Epoxidation of Conjugated C=C-Bonds and Sulfur-Oxidation of Thioethers Mediated by NADH:FMN-Dependent Oxidoreductases, *Org. Biomol. Chem.*, **2009**, *7*, 1115-1119.

6) M. Hall, C. Stueckler, B. Hauer, R. Stuermer, T. Friedrich, M. Breuer, W. Kroutil, K. Faber. Asymmetric Bioreduction of Activated C=C-Bonds using *Zymomonas mobilis* NCR Enoate Reductase and Old Yellow Enzymes OYE 1-3 from Yeasts[#], *Eur. J. Org. Chem.*, **2008**, 1511-1516.

5) M. Hall, C. Stueckler, H. Ehammer, E. Pointner, G. Oberdorfer, K. Gruber, B. Hauer, R. Stuermer, W. Kroutil, P. Macheroux, K. Faber. Asymmetric Bioreduction of C=C Bonds using Enoate Reductases OPR1, OPR3 and YqjM: Enzyme-Based Stereocontrol, *Adv. Synth. Catal.*, **2008**, 350, 411-418.

   Featured as one of the journal articles the most frequently cited among those published in 2008 or 2009 that have contributed the most to the journal's impact factor in 2010

4) C. Stueckler, M. Hall, H. Ehammer, E. Pointner, W. Kroutil, P. Macheroux, K. Faber. Stereo-Complementary Bioreduction of α,β-Unsaturated Dicarboxylic Acids and Dimethyl Esters using Enoate Reductases: Enzyme- & Substrate-Based Stereocontrol, *Org. Lett.*, **2007**, *9*, 5409-5411.

3) M. Hall, C. Stueckler, W. Kroutil, P. Macheroux, K. Faber. Asymmetric Bioreduction of Activated Alkenes Using Cloned 12-Oxophytodienoate Reductase Isoenzymes OPR-1 and OPR-3 from *Lycopersicon esculentum* (Tomato): A Striking Switch of Stereopreference, *Angew. Chem. Int. Ed.*, **2007**, *46*, 3934-3937.

   Highlighted in *Synfacts* **2007**, *7*, 0757

2) M. Hall, B. Hauer, R. Stuermer, W. Kroutil, K. Faber. Asymmetric Whole-Cell Bioreduction of an α,β-Unsaturated Aldehyde (Citral): Competing *prim*-Alcohol Dehydrogenase and C-C Lyase Activities, *Tetrahedron: Asymmetry*, **2006**, *17*, 3058-3062.

1) B. M. Nestl, S. M. Glueck, M. Hall, W. Kroutil, R. Stuermer, B. Hauer, K. Faber. Biocatalytic Racemization of (Hetero)Aryl-aliphatic α-Hydroxycarboxylic Acids by *Lactobacillus* spp. Proceeds *via* an Oxidation-Reduction Sequence, *Eur. J. Org. Chem.*, **2006**, 4573-4577.

REVIEWS

9) C. Winkler, K. Faber, M. Hall, Biocatalytic Reduction of Activated C=C-Bonds and Beyond: Emerging Trends, *Curr. Opin. Chem. Biol*., DOI: 10.1016/j.cbpa.2017.12.003.

8) J. H. Schrittwieser, S. Velikogne, M. Hall, W. Kroutil, Artificial Biocatalytic Linear Cascades for the Preparation of Organic Molecules, *Chem Rev*., DOI: 10.1021/acs.chemrev.7b00033.

7) Z. Assaf, K. Faber, M. Hall, Scope, Limitations and Classification of Lactamases, *J. Biotechnol*., **2016**, *235*, 11-23.

6) K. Durchschein, M. Hall, K. Faber, Unusual Reactions Mediated by FMN-Dependent Ene- and Nitro-Reductases, *Green Chem.*, **2013**, *15*, 1764-1772.

5) C. K. Winkler, G. Tasnádi, D. Clay, M. Hall, K. Faber, Asymmetric Bioreduction of Activated Alkenes to Industrially Relevant Optically Active Compounds, *J. Biotechnol.*, **2012**, *162*, 381-389.

4) B. T. Uebarbacher, M. Hall[*], K. Faber[*], Electrophilic and Nucleophilic Enzymatic Cascade Reactions in Biosynthesis[#], *Nat. Prod. Rep.*, **2012**, *29*, 337-350.

   Among the top 10 accessed articles from the journal online version February 2012

3) M. Hall[§] and A. S. Bommarius[§], Enantioenriched Compounds *via* Enzyme-Catalyzed Redox Reactions[#], *Chem. Rev.*, **2011**, *111*, 4088-4110.

2) P. Bansal, M. Hall, M. J. Realff, J. H. Lee, A. S. Bommarius, Modeling Cellulase Kinetics On Lignocellulosic Substrates, *Biotechnol. Adv.*, **2009**, *27*, 833-848.

1) R. Stuermer, B. Hauer, M. Hall, K. Faber. Asymmetric Bioreduction of Activated C=C Bonds Using Enoate Reductases from the Old Yellow Enzyme Family, *Curr. Opinion Chem. Biol.* **2007**, *11*, 203-213.

BOOK CHAPTERS

6) M. Hall, K. Faber, G. Tasnádi, Hydrolysis of Amides, In: *Science of Synthesis: Biocatalysis in Organic Synthesis* (Eds.: K. Faber, W.-D. Fessner, N. J. Turner), Georg Thieme Verlag, Stuttgart, **2015**, 303-327.

5) K. Faber and M. Hall, Addition of Hydrogen to C=C Double Bonds: Alkene Reduction. In: *Science of Synthesis: Biocatalysis in Organic Synthesis* (Eds.: K. Faber, W.-D. Fessner, N. J. Turner), Georg Thieme Verlag, Stuttgart, **2015**, 213-260.

4) G. Tasnádi, M. Hall, Relevant Practical Applications of Bioreduction Processes In the Synthesis of Active Pharmaceutical Ingredients. In: *Synthetic Methods for Biologically Active Molecules. Exploring the Potential of Bioreductions* (Ed.: E. Brenna), Wiley-VCH, Weinheim, **2013**, 329-374.

3) M. Hall, W. Kroutil, K. Faber, The Evolving Role of Biocatalysis in Asymmetric Synthesis. In: *Asymmetric Synthesis - The essentials II* (Eds.: M. Christmann and S. Bräse), Wiley-VCH, Weinheim, **2012**, 221-232.

2) M. Hall, C. K. Winkler, G. Tasnádi, K. Faber, Asymmetric Bioreduction of Activated Alkenes Using Ene-Reductases from the Old Yellow Enzyme Family. In: *Practical Methods for Biocatalysis and Biotransformations 2* (Eds.: J. Whittal, P. Sutton), John Wiley & Sons, Ltd, Chichester, **2012**, 87-95.

1) M. Hall, Y. Yanto, A. S. Bommarius, 'Old Yellow Enzyme' family and Enoate Reductases: Asymmetric Reduction of C=C Bonds and Activity on Nitro Compounds. In: *The Encyclopedia of Industrial Biotechnology: Bioprocess, Bioseparation, and Cell Technology* (Ed.: M. C. Flickinger), Wiley, Hoboken, NJ, **2010**, 2234-2247.

EDITED BOOK

1) G. Williams and M. Hall (Eds), *Modern Biocatalysis: Advances Towards Synthetic Biological Systems*, Catalysis Series, Royal Society of Chemistry, **2018**.

CONFERENCE PROCEEDINGS & MAGAZINES

2) A. Dennig, A. Thiessenhusen, S. Gilch, T. Haas, M. Hall, Biotechnologische Herstellung terminaler Alkene und Diene, *BioSpektrum*, **2016**, *06*, 614-616.

1) G. Oberdorfer, K. Gruber, C. Stückler, M. Hall and K. Faber, Computer Assisted Prediction of Complementary Stereospecificities in Enoate Reductases. In: *Flavins and Flavoproteins 2008* (Eds.: S. Frago, C. Gómez-Moreno, M. Medina), Proceedings of the Sixteenth International Symposium, Jaca, Spain, June 8-13, 2008, Prensas Universitarias de Zaragoza, Zaragoza, **2008**, 553-558.

PATENTS

7) A. Dennig, K. Faber, M. Hall, T. Haas, T. Bülter, S. Gilch, A. Thiessenhusen, Alkene Production, EP 3061827, **2016**

6) A. Dennig, K. Faber, M. Hall, T. Haas, T. Bülter, S. Gilch, A. Thiessenhusen, A Method of Producing Alpha-Amino Acids, WO 2016184656, **2016**.

5) M. J. Realff, R. W. Smith, B. Prabuddha, A. S. Bommarius, M. Hall, J. H. Lee, Methos of Enzymatic Hydrolysis of Cellulosics Using Crystallinitiy Index as Reaction Rate Indicator, US 20120315674, **2012**.

4) P. Bansal, A. S. Bommarius, M. Hall, J. H. Lee, Improved Methods of Treating a Biomass for Enzymatic Hydrolysis, WO 2011069106, **2011**.

3) P. Bansal, M. Hall, J. H. Lee, A. S. Bommarius, M. J. Realff, R. W. Smith, Improved Methods of Enzymatic Hydrolysis of Biomass, WO 2011057291, **2011**.

2) R. Stuermer, B. Hauer, T. Friedrich, K. Faber, M. Hall, P. Macheroux, C. Stueckler, Enzymatic Reduction of α- and β-Dehydroamino Acids, WO 2009074524, **2009**.

1) R. Stuermer, B. Hauer, T. Friedrich, K. Faber, M. Hall, Enzymatic Reduction of Alkene Derivatives, WO 2008058951, **2008**.

PEER REVIEW ACTIVITIES

Funding Agencies

Agropolis Foundation

Journals

ACS Catalysis; Advanced Synthesis and Catalysis; Applied Biochemistry and Biotechnology; Applied Catalysis A: General; Applied Microbiology and Biotechnology; Biocatalysis; Biocatalysis and Biotransformation; Bioresource Technology; Biotechnology for Biofuels; Catalysis Science & Technology; ChemBioChem; Chemical Communications; ChemSusChem; Enzyme and Microbial Technology; European Journal of Organic Chemistry; Frontiers in Microbiology; Green Chemistry; Journal of Biotechnology; Journal of Molecular Catalysis B: Enzymatic; Mini-Reviews in Medicinal Chemistry; Monatshefte für Chemie; New Journal of Chemistry; Process Biochemistry; RSC Advances; Tetrahedron

PROFESSIONAL AFFILIATIONS & ACTIVITIES

Austrian Chemical Society | GÖCH (*Gesellschaft Österreichischer Chemiker*)

German Chemical Society | GDCh (*Gesellschaft Deutscher Chemiker*)

Session Chair | Discussion Leader | Poster Selection Committee at International Conferences

Short-Listed for Tenure Track Assistant Professorship (W2) in Biomimetic Catalysis, TU Munich, Germany, **2017**

LANGUAGES

English (fluent) | German (fluent) | French (native)